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Occult hepatitis C virus infection among Iranian haemodialysis patients

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Objectives: Occult hepatitis C virus (HCV) infection is defined as the presence of HCV-RNA in liver or peripheral blood mononuclear cells (PBMCs) in the absence of detectable hepatitis C antibody (anti-HCV) or HCV-RNA in the serum. Despite anti-HCV screening of blood products and implementation of universal infection control precautions, HCV infection is still a major problem in hemodialysis (HD) patients. Low concentrations of HCV-RNA have been detected in PBMCs of patients who were cleared HCV either spontaneously or after treatment. Thus, occult HCV infection could have a great impact on the management of HD patients. The aim of this study was to detect the occult HCV infection in Iranian hemodialysis patients.

Methods: A total of 70 anti-HCV negative HD patients from three dialysis units in Tehran, Iran were included in this study. All enrolled patients were also negative for hepatitis B surface antigen (HBsAg) and anti-human immunodeficiency virus antibodies (anti-HIV). Liver enzymes [Alanin aminotransferase (ALT) and Aspartate aminotransferase (AST)] were determined in all of the patients. The ALT levels above 17 IU/l and the AST levels above 24 IU/l were considered as abnormal in HD patients. Presence of HCV-RNA in plasma samples of patients was tested by Reverse Transcriptase-Nested Polymerase Chain Reaction (RT-nested PCR). In cases with negative anti-HCV and plasma HCV-RNA, genomic HCV-RNA was checked in PBMC specimens by RT-nested PCR.

Results: A total of 70 anti-HCV negative HD patients with mean age 58.9±14.7 years were enrolled in the study. 45.7% of patients were male and 54.3% were female. The mean duration of HD was 5.9±4.9 years. 32.85% and 1.43% of cases had elevated levels of ALT and AST respectively. 7.14% of patients had elevated levels of both ALT and AST. HCV-RNA was negative in plasma samples of all anti-HCV negative HD subjects. HCV-RNA was not detected in any PBMC samples of HD cases with negative anti-HCV and plasma HCV-RNA.

Conclusion: Occult HCV infection was not detected in our HD patients despite of elevated levels of liver enzymes in some participants. Further studies involving larger number of HD patients are required to elucidate the rate of occult HCV infection in HD cases.